radiography

INSTRUCTIONS FOR USE

BuckyDiagnost VE/VT

Wall Bucky

Release 5

English

4512 109 26501 AA/704 – 10.2003

PHILIPS

Internet adress: http://
www.philips.com/ms

Copyright

This manual is a translation from the German.

1 Facts Worth Knowing

2 Safety

3 Legend

4 Operation

5 Maintenance

6 Technical Data

7 Appendix

Index

1 Facts Worth Knowing

1.1 Normal Use

The BuckyDiagnost VE and BuckyDiagnost VT are vertical radiography units for X-ray exposures – preferably with horizontal and oblique radiation beam – on patients in the standing, seated or lying position.

1.2 Prohibited Use

- When the Bucky unit is unfolded you must never use it as a seat or shelf.
- When making exposures in the seated position the patient must never stretch his or her legs under the tilted Bucky
- The patient must not hang from the stretch grip

1.3 Version

This version of the Instructions for Use corresponds to the latest version of the X-ray equipment at the time of going to press.

This X-ray equipment is available in various configurations. These Instructions for Use describe the largest possible configuration. It is therefore possible that functions (indicated as optional) are described which do not form part of your unit.

1.4 For safe operation

- If the user wishes to connect the X-ray equipment to other equipment, components or assemblies and if it is not apparent from the technical data whether it can be safely combined with such equipment, components or assemblies, the user must ensure that the safety of the patient, operating staff and the environment is not affected by the planned combination by consulting the manufacturers involved or by making enquiries from an expert.
- Philips is responsible for the safety features of its products only if maintenance, repairs and modifications have been performed by Philips or by persons explicitly authorised to do so by Philips.
- As with any technical appliance, this equipment requires not only correct operation but also regular, competent maintenance and care, which are described in the section ”Maintenance“.
- If you operate the X-ray equipment incorrectly or if the user fails to have maintenance carried out properly, Philips cannot be held liable for any malfunctions, damage or injuries.
- Safety circuits must be neither removed nor modified.

Philips Medical Systems 5 Nov. 2003

- You may remove or open parts of the housing only if you are instructed to do so in this manual.

1.5 Conformity

This Medical Device meets the provisions of the Medical Device Directive MDD 93/42 EEC (93).
If you have further questions regarding the applicable national or international standards, please address them to:

Philips Medical Systems DMC GmbH
Quality Assurance Department
Roentgenstrasse 24
D-22335 Hamburg
Fax: (+49) 40/5078-2147

1.6 Training

The X-ray equipment may only be operated by persons who have the necessary expertise in radiation protection or knowledge of radiation protection and who have been instructed in how to operate the X-ray equipment.

2 Safety

2.1 About this manual

This manual is intended to enable you to work safely with the X-ray equipment described. You may only use this equipment in compliance with the safety instructions in this manual and not for purposes other than those for which it is intended.

It is always the user who is responsible for complying with the regulations which apply to the setting up and operation of X-ray equipment.

BuckyDiagnost VE and BuckyDiagnost VT are parts of an X-ray system. If there is any interaction with other components of the system, these Instructions for Use contain extracts from other manuals. You will find further information in the manual of the relevant component.

2.2 Electrical safety

This X-ray equipment meets the safety class I and type B according to IEC 60601-1.

Only trained maintenance staff may remove the covers from the high-voltage cable of the X-ray tube assembly and the high-voltage generator.

This X-ray equipment may only be operated in medical rooms which meet IEC requirements.

- ***You must never operate this X-ray equipment in areas where there is a risk of explosion.***
- ***Detergents and disinfectants, including those used on patients, may create explosive mixtures of gases. Please observe the relevant regulations.***

2.3 Mechanical safety

- ***Please ensure that neither the patient nor yourself allows hands to enter the radius of movement of the X-ray equipment and that no parts of clothing are caught by it.***
- ***Remove all objects from the radius of movement of the X-ray equipment.***

2.4 Electromagnetic compatibility (EMC)

In accordance with its intended use, this electronic apparatus complies with the law governing EMC, which defines the permitted emission levels from electronic equipment and its required immunity against electromagnetic fields.

Nevertheless, it is not possible to exclude with absolute certainty the possibility that radio signals from high-frequency transmitters, e.g. mobile phones or similar mobile radio equipment, which themselves conform to the EMC regulations, may influence the proper functioning of electromedical apparatus if such equipment is operated in close proximity and with relatively high transmitting power. Therefore, operation of such radio equipment in the immediate vicinity of electronically controlled medical apparatus should be avoided to eliminate any risk of interference.

Explanation:
Electronic apparatus that satisfies the EMC requirements is designed so that under normal conditions there is no risk of malfunction caused by electromagnetic interference. However, in the case of radio signals from high-frequency transmitters with a relatively high transmitting power, the risk of electromagnetic incompatibility when operated in close proximity to electronic apparatus cannot be totally ruled out.

In unusual circumstances unintended functions of the apparatus could be initiated, possibly giving rise to undesirable risks for the patient or user.

For this reason, all kinds of transmission with mobile radio equipment should be avoided. This also applies when the apparatus is in ”standby“ mode.
Mobile telephones must be **switched off** in designated problem zones.

2.5 Radiation protection

- ***Ensure that before performing any radiography all the necessary radiation precautions have been taken.***
- ***Personnel in the examination room must comply with the valid radiation protection regulations when using X-rays. Please comply with the following rules:***
- ***To protect the patient against radiation always use radiation protection accessories in addition to devices which are fitted to the X-ray equipment (e.g. diaphragm, spacer, filter).***
- ***Wear protective clothing. Radiation protection aprons with a lead equivalent of 0.35 mm attenuate X-radiation at 50 kV by 99.84%, and at 100 kV by 91.2%.***

- ***Distance is the most effective radiation protection. Keep as large a distance as possible away from the object exposed and the X-ray tube assembly. Scattered radiation is largely dependent on the volume of the object being exposed.***
- ***Wear a personal dosemeter. Philips recommends determining the personal dose occurring at the workplace under practical conditions and, where required, laying down any necessary radiation precautions, specifying the use of bar and/or finger-ring dosemeters in addition.***
- ***Always select a focal spot to skin distance as long as possible to keep the absorbed dose for the patient as low as could reasonably be possible.***
- ***Always be aware that any material brought into the path of radiation between the patient and the image receptor (e.g. film) will have a negative influence on the image quality as well as on the patient dose.***
- ***Always make sure that acoustic and visual communication between operator and patient is guaranteed also during exposure. If necessary, communication must be established with technical means, for instance, an intercom.***
- ***Safety circuits which may prevent X-radiation from being switched on under certain conditions may be neither removed nor modified.***

2.6 Disposal

Philips manufactures state-of-the-art X-ray equipment in terms of safety and environmental protection. Assuming no parts of the system housing are opened and assuming the system is used properly there are no risks to persons or the environment.

To comply with regulations it is necessary to use materials which may be harmful to the environment and therefore have to be disposed of in a proper manner.

For this reason you must not dispose of the X-ray equipment together with industrial or domestic waste.

Philips
- supports you in disposing of the X-ray equipment described in a proper manner
- returns reusable parts to the production cycle via certified disposal companies and
- thus helps to reduce environmental pollution.

Consequently, do contact your Philips Service Organisation in full confidence.

Philips Medical Systems 5 Nov. 2003

3 Legend

These Instructions for Use describe the BuckyDiagnost VT with operation of the Bucky from the left-hand side. A unit with the controls on the right-hand side must be operated accordingly.

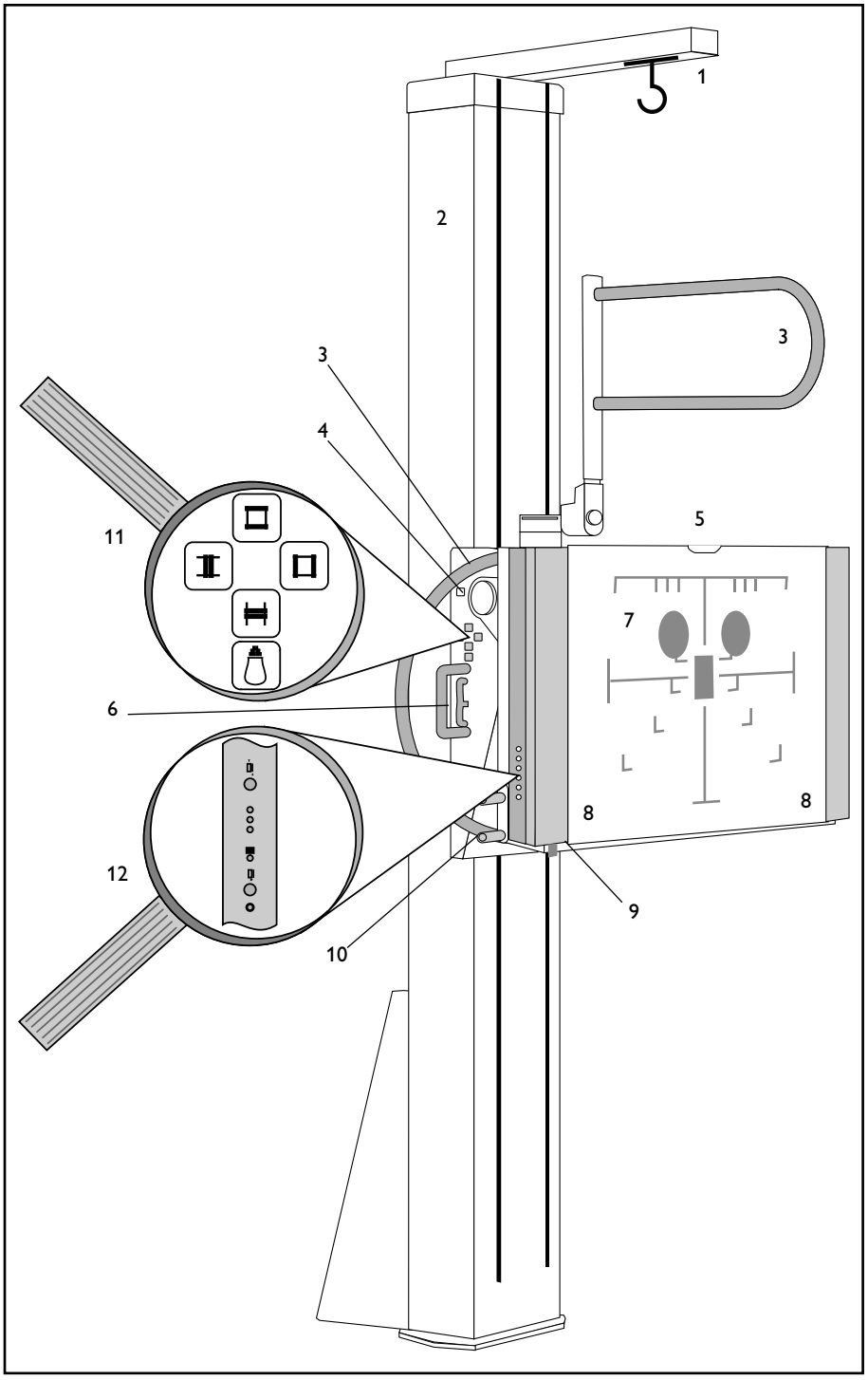
3.1 Design and functioning

The BuckyDiagnost VE/VT series consists of the versions described below:

- BuckyDiagnost VE
  This consists of a column carrying the Bucky unit, which can be moved vertically. The unit is available for operation from the left or right side. You can attach the stretch grip on the left or right, and you can attach accessories to the rails on the front panel.
- BuckyDiagnost VT
  This unit is operated in exactly the same way as the BuckyDiagnost VE; in addition, you can tilt the Bucky unit.
- Both the BuckyDiagnost VE and the BuckyDiagnost VT can be equipped with
  - a standard cassette tray
  - a cassette tray with automatic size sensing
  - a cassette tray with automatic cassette loading/ejection (ACL4) with
    – automatic size sensing and
    – an interchangeable grid,
  - tracking and remote-controlled collimator.

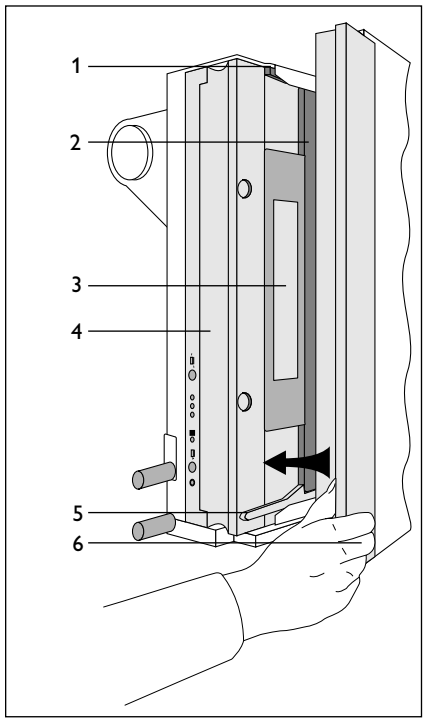
Philips Medical Systems 5 Nov. 2003

3.2 Das BuckyDiagnost VE/VT



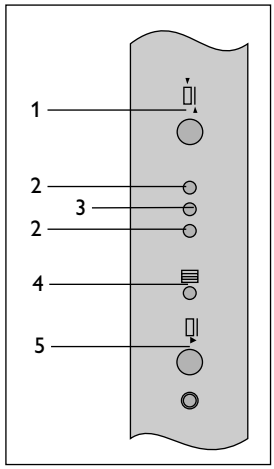
No.	Description
1	BABIX holder (optional accessory), maximum load: 10kg
2	Column
3	Stretch grip for lateral exposures (optional accessory), maximum load: 25kg Grips for PA exposures (optional accessory)
4	Angle of tilt displayed on both sides (BuckyDiagnost VT)
5	Chin rest
6	Raise/lower Bucky unit
7	Position of the automatic exposure control measuring fields
8	Rails for accessories
9	Open front panel (with ACL4 only)
10	Tilt Bucky unit (BuckyDiagnost VT only) Maximum load of horizontal Bucky unit: 25kg
11	If tracking (optional accessory) is installed:  Open diaphragm vertically  Close diaphragm vertically  Open diaphragm horizontally  Close diaphragm horizontally  Switch light beam lamp on
12	Operation and display of ACL4 (see Chap. 3.3)

3.3 Automatic cassette tray ACL4



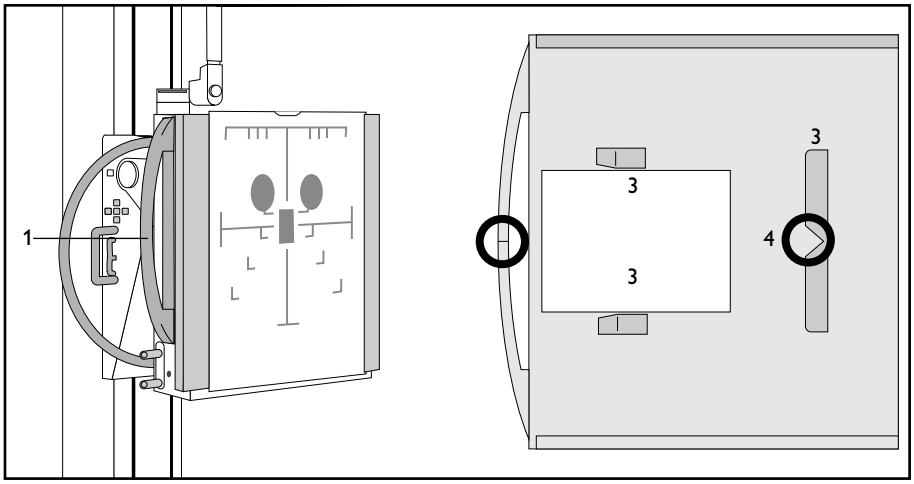
No.	Description
1	Grid insertion stop
2	Interchangeable grid
3	Grid grip with label
4	Cassette carriage slit
5	Lever for unlocking the grid
6	Close front panel **only here**

3.3.1 Displays



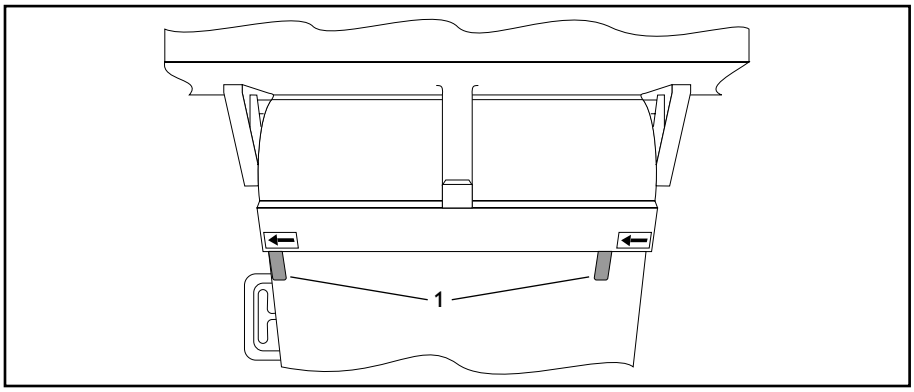
No.	Description
1	Switch over cassette position Position the cassette centrally/off centre in the Bucky at the top. Select the cassette position with the cassette carriage moved out. If the cassette is already positioned, you can only move it once.
2	Yellow LED: Position cassette off centre. Depending on whether you have a left or right-handed version, one of the two LEDs lights up
3	Green LED: Cassette is positioned. – LED flashes slowly: cassette is being transported – LED flashes quickly: positioning error; remove cassette and reinsert – LED lit: cassette is positioned
4	Green LED: Grid is fully inserted
5	Open or close cassette tray

3.4 BuckyDiagnost VT with manual cassette tray



No.	Description
1	Grip of the cassette tray
2	Mark for centering the tube assembly opposite the cassette tray if cassette is inserted centrally
3	Locking lever for the cassette
4	Mark for centering the cassette

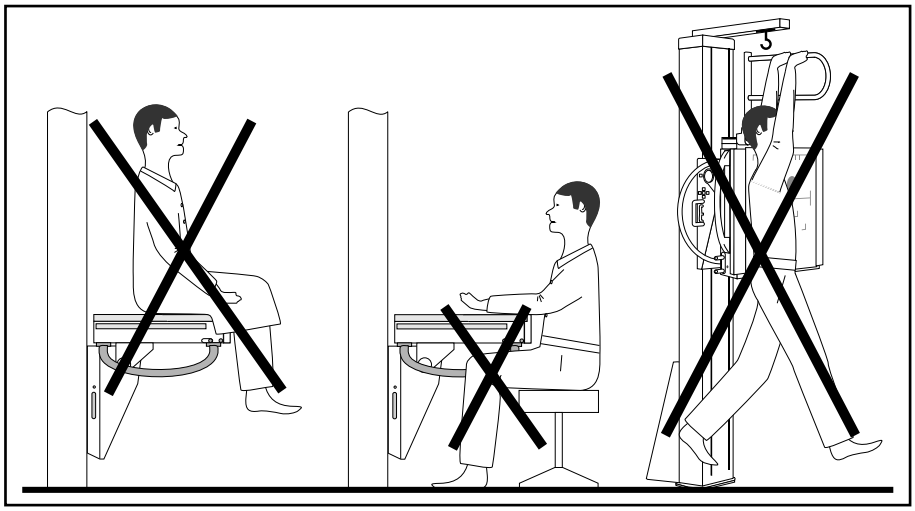
3.5 The stop in the BuckyDiagnost VT

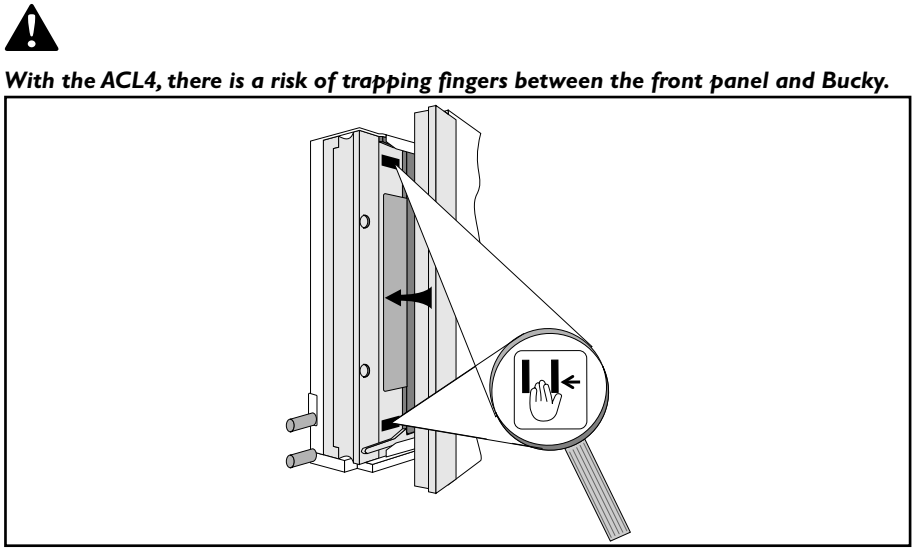


No.	Description
1	Lever for setting the stop Right-hand lever: stop at -20° Left-hand lever: stop at 0° (front panel vertical)

4 Operation

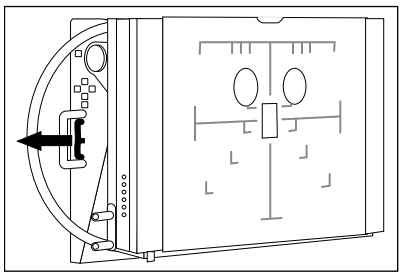
4.1 Bucky unit



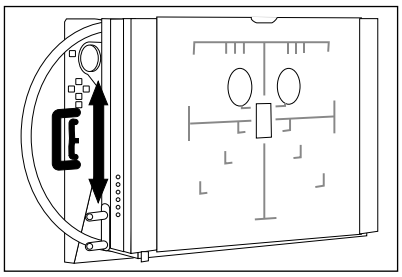


With the ACL4, there is a risk of trapping fingers between the front panel and Bucky.

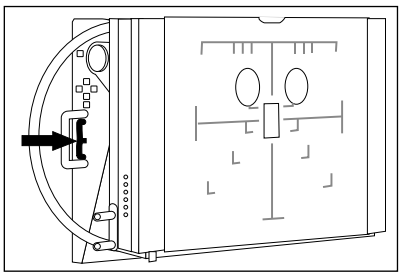
4.1.1 Raising/lowering the Bucky unit



1.

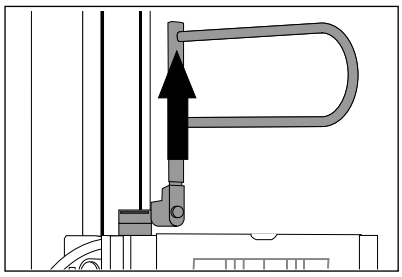


2.

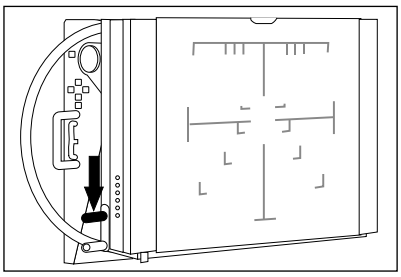


3.

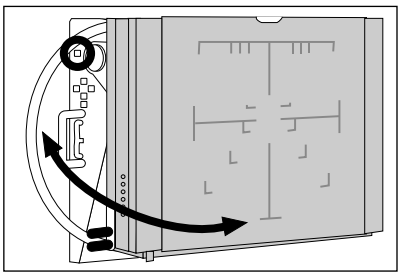
4.1.2 Tilting the Bucky unit (VT)



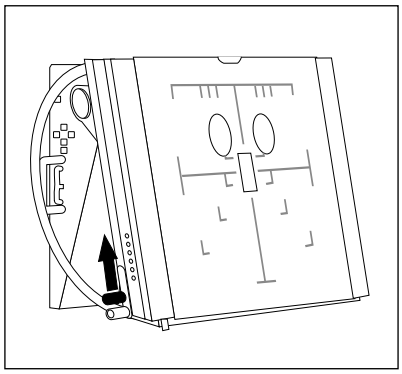
1.



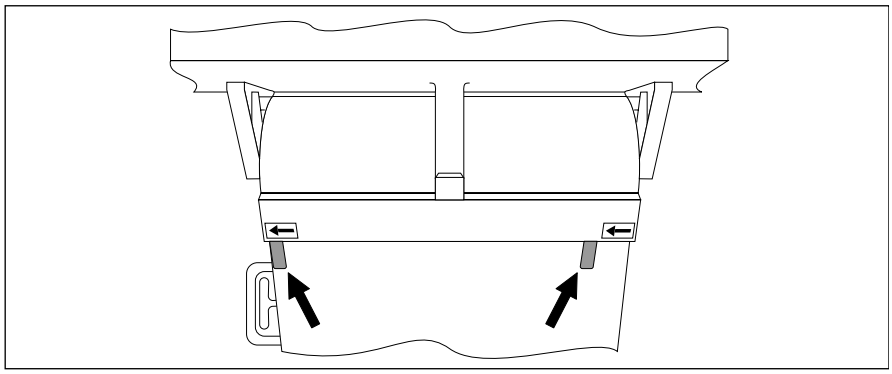
2.



3. Read the tilt angle off the scale



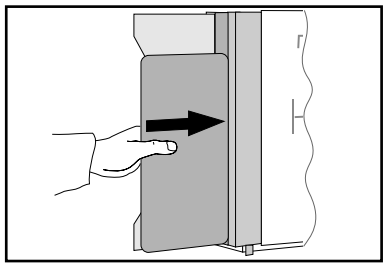
4.



5. Set stop, if necessary

4.2 Cassette tray ACL4

4.2.1 Inserting a cassette



Slide the cassette into the cassette carriage as far as the stop and then let go of it.

Philips makes the following recommendation for exposures with tilted Bucky unit at angles between 0° and -20°:
Insert the cassette at 0° before tilting the Bucky unit.

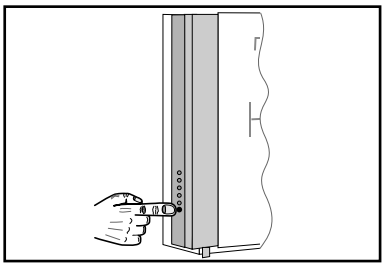
If you nevertheless wish to insert the cassette with the Bucky unit tilted, please observe the following:

Insert the cassette in the cassette carriage just far enough so that its front edge is held by the cassette carriage. Otherwise the cassette may drop onto the measuring chamber.

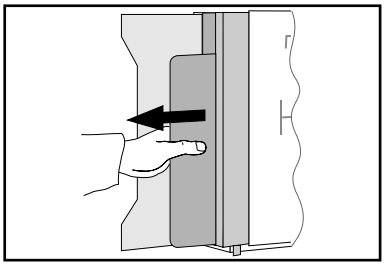
Lead type

The lead type is usually attached directly to the cassette using adhesive tape, according to requirement. Up to a thickness of 3 mm, there is no reason not to do this. Use a new strip of adhesive tape each time, as otherwise the lead type will become detached and fall into the electronics, which may cause serious damage to the Bucky.

4.2.2 Removing a cassette



1 Press the button



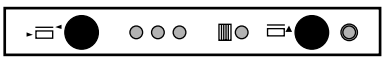
2 Remove the exposed cassette, otherwise you will not receive system release for the next exposure.

So that the patient can use the side and rear grips comfortably, the cassette carriage only moves into the unloading position upon request.

The reset function

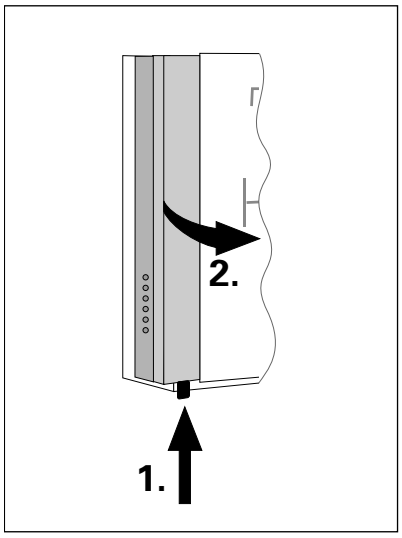
The ACL4 always carries out a self-test and stops automatically to prevent damage if an error is detected. This may mean that you are not able to remove an exposed cassette. In this case you can reactivate the ACL4 with "Reset" and then remove the cassette - as described in the Instructions for Use.

If there is a mechanical blockage, "Reset" has no effect. You must inform Customer Service.

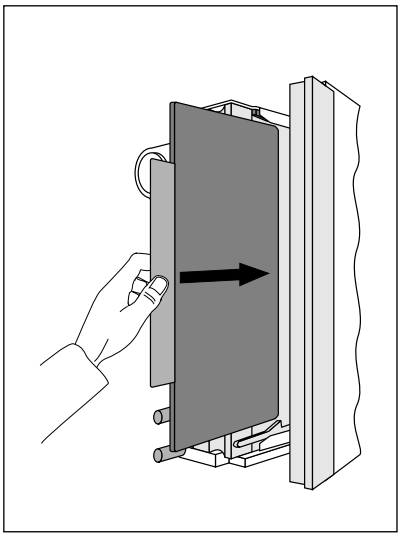


For "Reset", press both buttons simultaneously.

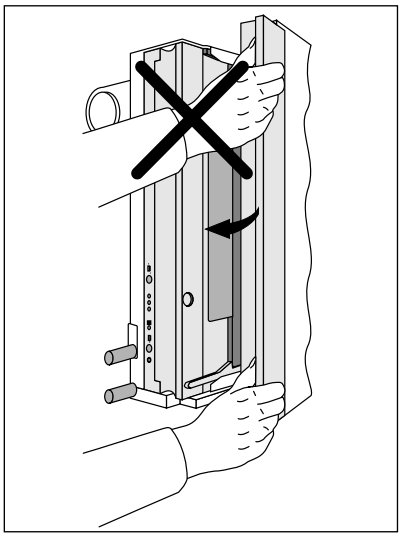
4.2.3 Inserting an interchangeable grid



1.

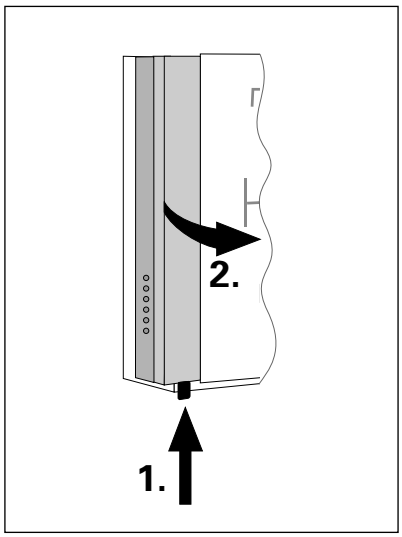


2.

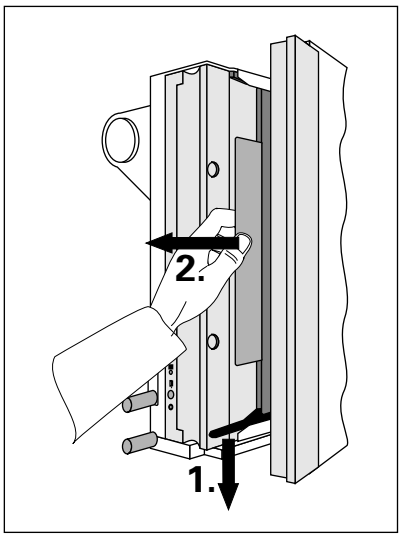


3.

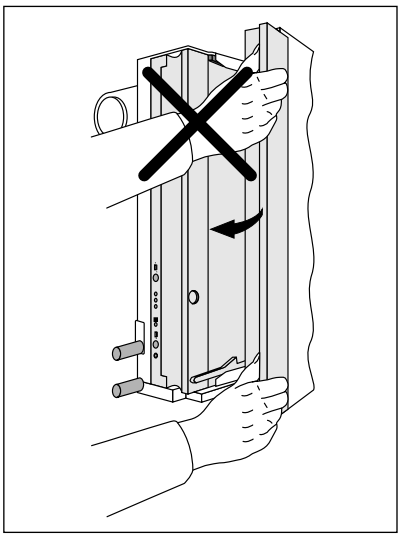
4.2.4 Removing an interchangeable grid



1.



2.



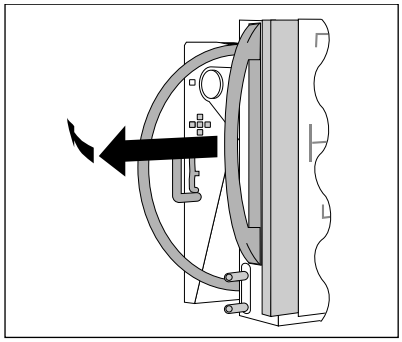
3.

4.3 Manual Bucky

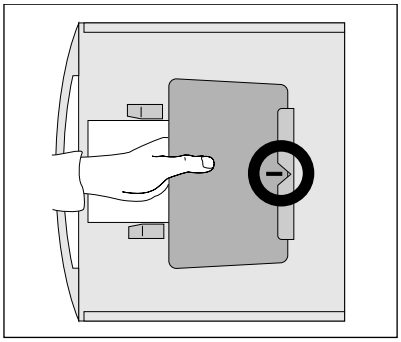
4.3.1 Inserting a cassette

You can also insert the cassette off-centre with size sensing and tracking, if programmed.

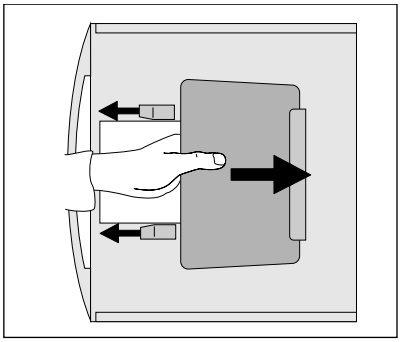
Risk of trapping fingers between the cassette and cassette tray.



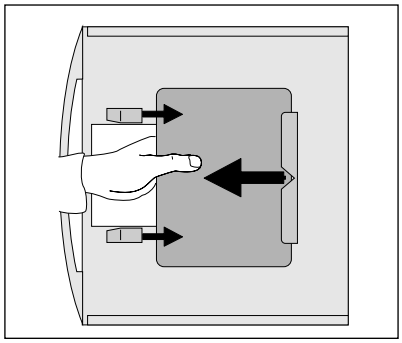
1.



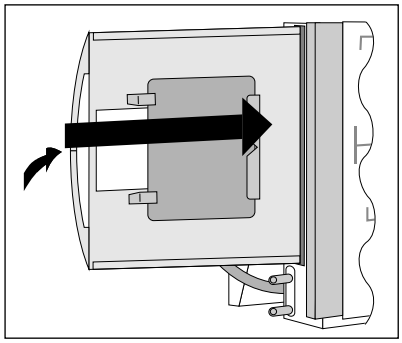
2.



3.



4.



5.

Lead type

The lead type is usually attached directly to the cassette using adhesive tape, according to requirement. Up to a thickness of 3 mm, there is no reason not to do this. Use a new strip of adhesive tape each time, as otherwise the lead type will become detached and fall into the electronics, which may cause serious damage to the Bucky.

4.3.2 Size sensing (optional)

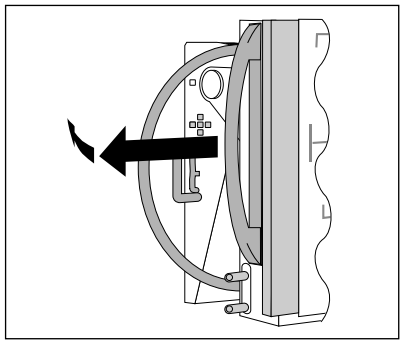
After inserting the cassette tray, the unit registers the size of the cassette inserted.

The accuracy with which the size is detected depends on how precisely you have inserted the cassette in the centre.

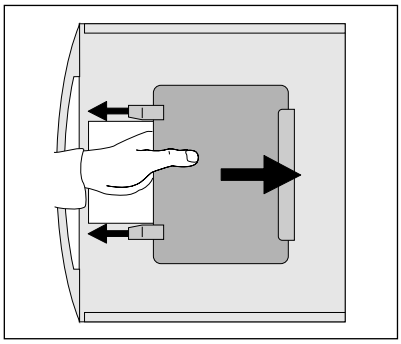
Therefore Philips recommends that you insert the cassette as precisely in the centre as possible.

4.3.3 Removing a cassette

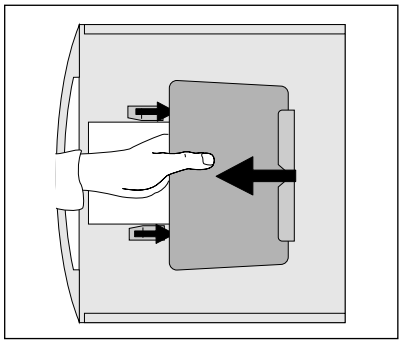
Risk of trapping fingers between the cassette and cassette tray.



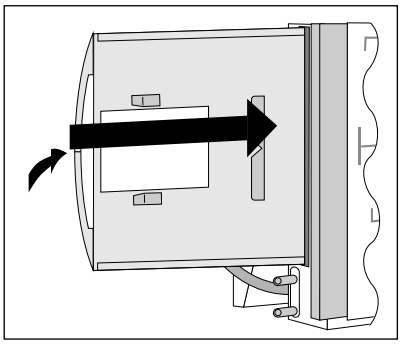
1.



2.

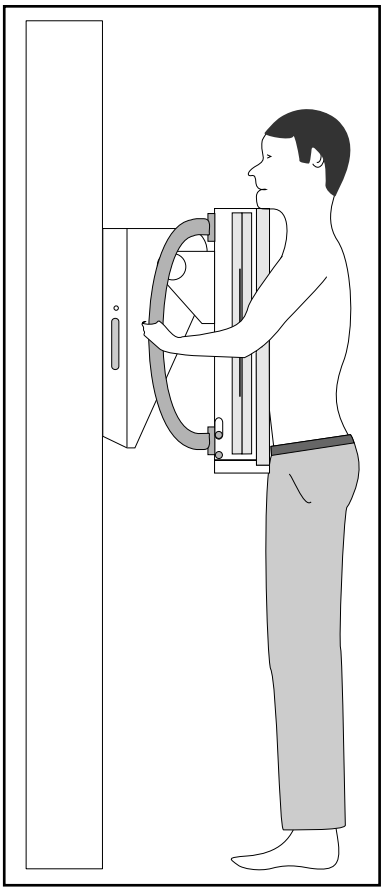


3.



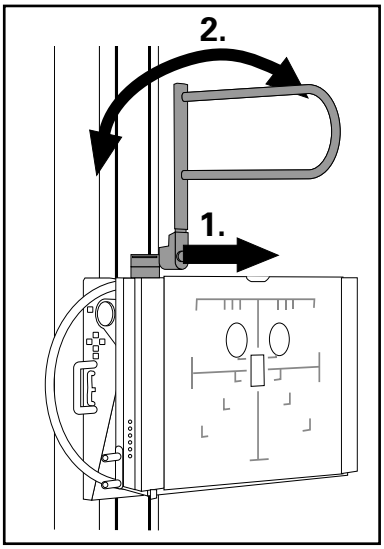
4.

4.4 Positioning the patient



Example: Thorax PA

1. Clean the chin rest and front panel.
2. Position the patient in front of the Bucky unit; to make positioning the patient more comfortable, the patient should use the grips (optional accessories).
3. Slide the Bucky unit to the required height.
4. Attach any accessories neccessary.
5. Point the X-ray tube assembly at the Bucky unit.
6. Set the source-image distance (SID).



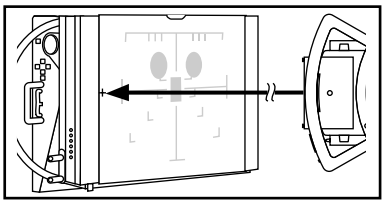
7. Swivel the stretch grip

⚠

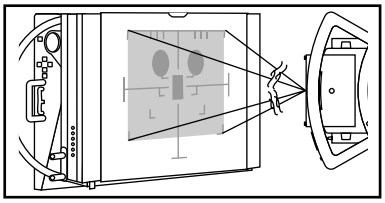
Risk of trapping fingers between the stretch grip and Bucky unit.

You can adjust the height of the stretch grip to suit the patient's height.

8. Switch on light pointer.



9 For cassettes inserted **centrally**:
Slide the X-ray tube assembly vertically until the light pointer is opposite the mark.



For cassettes inserted **off-centre**:
Example: Cassette at the top edge of the cassette tray
Move the tube assembly vertically so that the upper limit of the exposed area is opposite the top mark.

10 Collimate
With automatic size sensing you can still change the exposed area within the beam limitation.

4.5 Exposure

1 Set exposure parameters

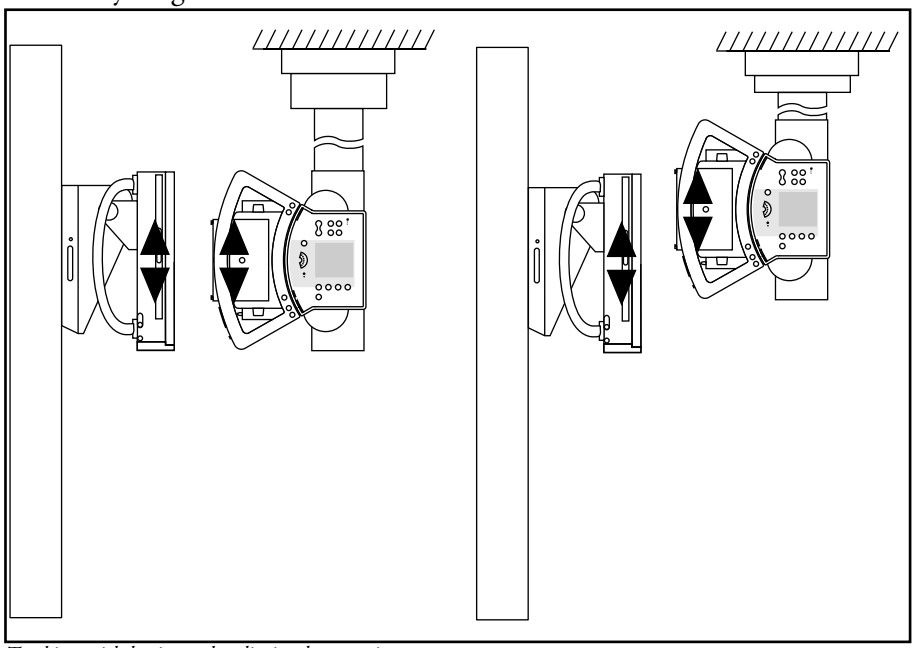
2 Release exposure.

4.6 Tracking for the SID

(Optional, only in combination with BuckyD. CS or BuckyD. FS with automatic size sensing)

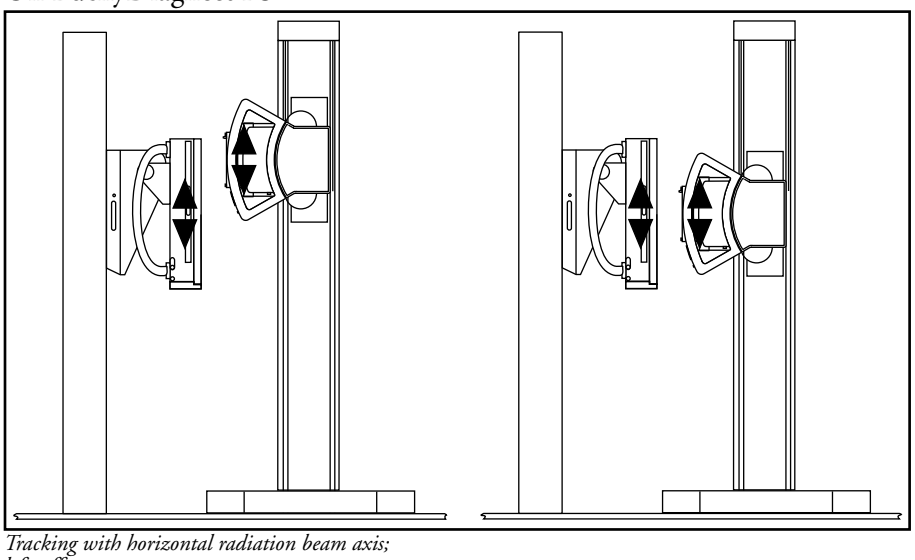
What you ought to know about the tracking function

On BuckyDiagnost CS



Tracking with horizontal radiation beam axis;
left: centered
right: off-centre

On BuckyDiagnost FS



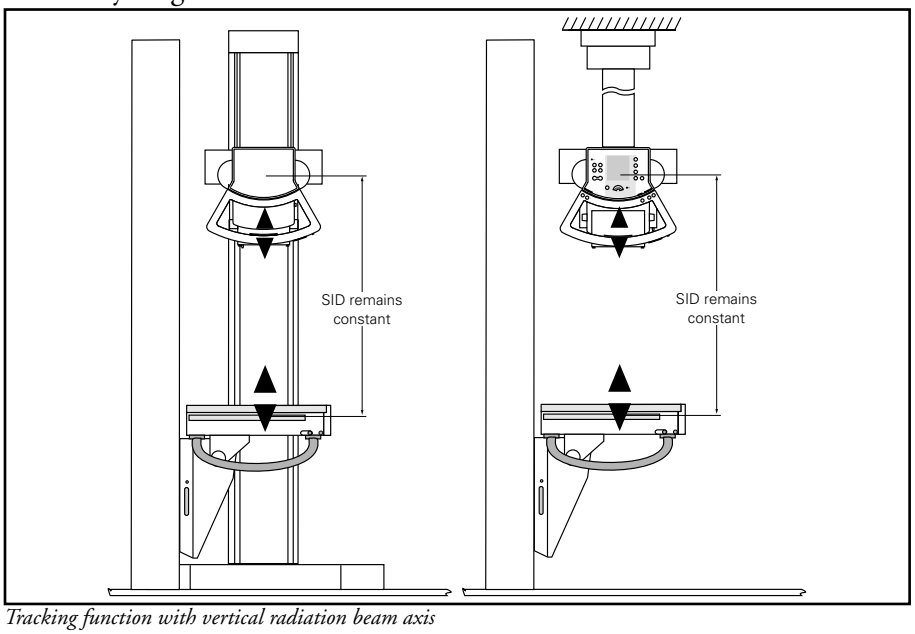
Tracking with horizontal radiation beam axis;
left: off-centre
right: centered

- The tracking function can only be active if
  - the components of the system are in a defined exposure position (see the Instructions for Use for the BuckyD. CS and BuckyD. FS),
  - the tube assembly is at 0° or 90°
  - the cassette has been inserted centrally.
- The tracking system is protected against collision. If the tube assembly meets an obstacle, it stops when a certain force is exceeded. Then it moves back slightly.

Risk of collision and trapping fingers!

Observe the position of the patient and ensure unobstructed paths for the tube assembly.

On BuckyDiagnost VE/VT



Tracking function with vertical radiation beam axis

Wall column

- If the cassette has been inserted centrally, the tube assembly is guided so that the radiation beam hits the centre of the cassette.
- If the cassette has been inserted off-centre and has a portrait format of ≥24 cm x 30 cm, the tube assembly is guided so that the top edge of the collimated field remains even if collimation is performed manually.
- If the cassette has a portrait format of <24 cm x 30 cm, off-centre collimation is not possible.
- If the BuckyDiagnost VT is not vertical when the radiation beam is horizontal, the tracking function is deactivated. The display on the control grip shows "Wall stand tilted".

If the Bucky unit is horizontal and the radiation beam axis is vertical, the SID remains when you change the height of the Bucky unit.

Capture range

All the messages appear on the control grip display.

- The "Tracking ready" message indicates that for the auxiliary selected you can use the tracking function but the tube assembly is still far away from the exposure position. So that you do not have to move the tube assembly to the exact exposure position manually, there is a "capture range". As soon as the tube assembly is in the capture range, it is moved to the exact exposure position automatically.
- The capture range is above and below the set SID or the level of the radiation beam axis if the beam is horizontal. You can activate the tracking function by manually moving the tube assembly into the vicinity of the SID or the level of the radiation beam axis in the case of a horizontal beam, i.e. into the capture range. If you then let go of the button to enable tube assembly movements, the tracking function is activated and moves the tube assembly to the pre-set SID or to the level of the cassette if the radiation beam is horizontal.
- The capture range is set by Customer Service.
- Outside the capture range, work is manual.
- In the case of "free" exposures with a vertical radiation beam axis you measure the focus-film (or cassette) distance with the tape measure. The tracking function then moves the tube assembly to your preferred height.

Please bear in mind that if the radiation beam axis is oblique the tracking function is switched off.

Switching on the tracking function

You switch on the tracking function by pressing one of the four buttons for the auxiliaries twice. The following appears:

- "Servo active" or
- "Servo standby" and
- "AT".

"Servo active":

- If the tube assembly is in the capture range, it moves to the exposure position.
- The tube assembly follows any adjustment to the Bucky unit height.

"Servo standby":

1 Move the tube assembly into the capture range. You have reached it when "Servo active" appears.

Activating the tracking function

1 Select auxiliary on the control grip or on the generator control desk.

When the auxiliary is selected on the generator control desk, the tube assembly and wall column may start to move. Observe the position of the patient and ensure unobstructed paths for the tube assembly and column.

2 Press the button for the selected auxiliary again.
- "Servo active" appears.
- If the tube assembly was not in the exposure position, it will move to that position.
- If the tracking function cannot be activated, an appropriate message will appear. A list of all the possible messages can be found in the Appendix.

Changing auxiliaries

- When the tracking function has been activated, you can change the auxiliary. The tracking function remains activated.

Deactivating the tracking function for the SID

You can only deactivate the tracking function when "Servo active" is displayed.

1 Press the button for the selected auxiliary. "Servo off" appears
or
raise or lower the tube assembly manually until "Servo active" appears.

The tracking function is **automatically deactivated** if you do any of the following during tracking:
- swivel the tube assembly,
- interrupt the movement of the tube assembly,
- release the central brake,
- release the brake for "Raise/lower tube assembly" or
- rotate the tube assembly round the horizontal axis.

5 Maintenance

As with any technical appliance this X-ray equipment also requires
- proper operation,
- regular testing by the user,
- regular service and repair.

By taking these precautions you maintain the operability and operational reliability of the system. As the user of an X-ray unit you are obliged according to accident prevention regulations, the medical products law and other regulations to take such precautions.

Maintenance consists of **tests which the user can perform** and **maintenance** which is performed under service agreements, Philips service orders or by persons explicitly authorised to do so by Philips.

5.1 Tests by the user

The user must check the X-ray equipment for apparent defects (see table). If operational defects or other departures from normal operational behaviour occur, he must switch off the X-ray unit and inform the Service Organisation. He may only resume operation of the X-ray equipment when it has been repaired. Operation using faulty components may lead to an increased safety risk or unnecessarily high exposure to radiation.

Interval	Scope	Method
Daily	Stability test	
Daily	Faulty display lamps, damaged components, labels and warning signs	Inspection
Daily	Irregularities in the displays (flickering, failure)	Inspection
Daily	SID measurement at the automatic collimator	Inspection
Weekly	All cables and terminals (damage, breakage)	Inspection
6 months	Centring aids for X-ray tube assembly and image receptor (marks, catches, contacts)	Inspection

5.2 Safety checks according to the Medical Device Directive

The safety checks cover operability and operational reliability. They must be performed at least every 2 years. These tests constitute part of our preventive maintenance under our service agreements. They cover
- visual checking for completeness and apparent damage or defects as well as soiling, sticking parts and wear and tear which may affect safety,
- testing the necessary monitoring, safety, display and indicating systems,
- measuring the safety-relevant output parameters,

- checking electrical safety as well as the operability of an internal energy supply,
- for the particular product other special technical tests according to the generally accepted standards of engineering practice,
- other necessary tests specified by the manufacturer,
- recording results and filing the test reports in the X-ray system manual (medical products logbook).

5.3 Maintenance

X-ray units contain mechanical components such as drive chains, ropes, steel strips and gears which are subjected to wear and tear due to operation. They include means of suspension for heavy components (e.g. image intensifier, X-ray tube assembly etc.). After a lengthy period of operation the safety of the suspension may be impaired by wear and tear (e.g. rope break).

The correct setting of the electromechanical and electronic assemblies affects the functioning, image quality, electrical safety and exposure of the patient and medical personnel to radiation.

Philips recommends you to
- **perform the tests indicated in the table on a regular basis,**
- **have the X-ray unit serviced by the Philips Service Organisation at least once a year. You must have heavily used X-ray equipment subjected to maintenance more frequently.**

In this way you avoid endangering the patient and you meet your obligations.

By entering into a service agreement with Philips you retain the value and safety of your X-ray equipment. All the necessary maintenance, including the safety tests for the purpose of preventive avoidance of danger and the necessary settings for optimum image quality and minimum exposure to radiation, are performed at regular intervals. Philips agrees on these intervals with you, taking the legal requirements into account.

Faulty components which affect the safety of the X-ray equipment must be replaced by genuine spare parts.

5.4 Recording results

Service and repairs must be entered in the medical products logbook, including the following data:
- type and scope of work,
- if necessary, details of any changes to ratings or the working zone, date, person performing the work, signature.

5.5 Cleaning

Please bear the following in mind when choosing a detergent:
To clean plastic surfaces you must never use anything other than soap and water. If other detergents are used (e.g. with a high alcohol content) the material will become matt or tend to crack. Never use any corrosive, solvent or abrasive detergents or polishes.

When cleaning, please observe the following:
- Before cleaning the X-ray equipment switch off at the mains. The capacitor may still be live 4 hours after switching off.
- Ensure that no water or other liquids can enter the X-ray equipment. This precaution prevents electrical short-circuits and corrosion forming on components.
- You should wipe enameled parts and aluminium surfaces only with a damp cloth and mild detergent and then rub with a dry woollen cloth.
- Rub down chrome parts with a dry woollen cloth only.

5.6 Disinfection

The method of disinfection used must conform to the legal regulations and guidelines regarding disinfection and explosion protection.

Never use any corrosive, solvent or abrasive detergents or polishes.

If you use disinfectants which form explosive mixtures of gases, these must first have evaporated before you switch the X-ray equipment on again.

- Before disinfecting the X-ray equipment switch off at the mains.
- You may disinfect all parts of the X-ray equipment, including the accessories and connecting cables, by wiping only.
- Disinfection by spraying is not to be recommended because the disinfectant may enter the X-ray equipment.

If you perform a room disinfection with an atomizer, you must switch off the X-ray equipment first. When the X-ray equipment has cooled down, cover it over carefully with a plastic sheet. When the mist of disinfectant has subsided you can remove the plastic sheets and disinfect the X-ray equipment by wiping.

Philips Medical Systems 5 Nov. 2003

6 Technical Data

	with manual cassette transport	with motorized cassette transport
Grid	Standard, Al cover, 36 l/cm f_0 = 110 cm, r = 8, r = 12 f_0 = 140 cm, r = 8, r = 12 f_0 = 180 cm, r = 12	GRP cover, 36 l/cm f_0 = 110 cm, r = 8, r = 12 f_0 = 140 cm, r = 8, r = 12 f_0 = 180 cm, r = 12
Size sensing	Option	Standard
Interchangeable grid	–	Standard
Cassette sizes [cm/inch][1)]	13 x 18 / 5 x 7 ——— / 6.5 x 8.5 18 x 24 / ——— 18 x 43 / 7 x 17 ——— / 8 x 10 20 x 40 / ——— 24 x 24 / 9.5 x 9.5 24 x 30 / ——— ——— / 10 x 12 ——— / 11 x 14 30 x 30 / 12 x 12 30 x 35 / ——— 30 x 40 / ——— 35 x 35 / 14 x 14 35 x 43 / 14 x 17 40 x 40 / ———	 18 x 24 / ——— 18 x 43 / 7 x 17 ——— / 8 x 10 20 x 40 / ——— 24 x 24 / 9.5 x 9.5 24 x 30 / ——— ——— / 10 x 12 ——— / 11 x 14 30 x 30 / 12 x 12 30 x 35 / ——— 30 x 40 / ——— 35 x 35 / 14 x 14 35 x 43 / 14 x 17 40 x 40 / ———
Front panel, dimensions (H x W)	604 mm x 628 mm	534 mm x 731 mm
Distance front panel-film	40 mm	52 mm
Al equivalent	≤0.55 mm	≤0.55 mm
Basic unit – Height/height adjustment – Bottom position (centre of image receptor) BuckyDiagnost VT – horizontal movement of the Bucky unit – tilt angle	 224 cm/152 cm 38 cm 70 cm -20° … 90° 0° stop adjustable	 224 cm/152 cm 31 cm 70.8 cm -20° … 90° 0° stop adjustable
Weight of BuckyD.VE/VT	158 kg/204 kg	164 kg/212 kg
Cassette holder	all cassettes from 18 cm x 24 cm to 35 cm x 43 cm, compatible with all versions of the BuckyDiagnost VE/VT	

1) The standard sets the measurements but not the design. Therefore individual cassettes with an unusual design may "not fit" despite conforming to the standard, e.g. "3M".

Philips Medical Systems

Accessories

- Floor attachment
- Spacer (VE)
- Cassette holder
- Long cassette holder
- Patient grips
- Stretch grip
- Pair of grips (right, left)
- Back supports
- Babix holder
- Various grids in combination with motorized cassette transport

Optional accessories

Cassette trays:

- standard version
- with automatic size sensing
- with
  - automatic cassette loading/ejection,
  - automatic size sensing,
  - manually interchangeable grid

Tracking function

Compatibility

Generators

- Optimus
- MEDIO
- SCP versions

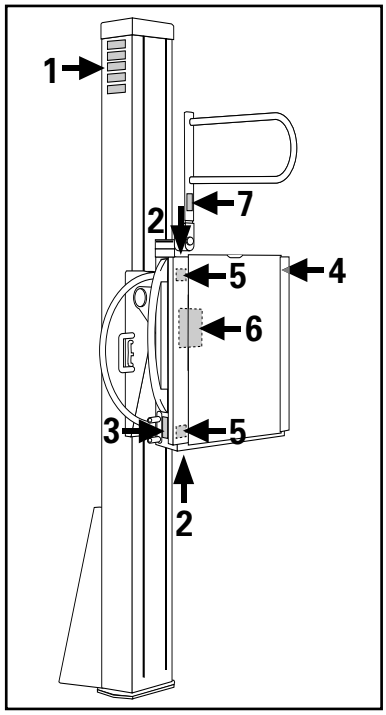
System options

- Buckys
  - manual
  - motorized cassette transport with interchangeable grids
- Cassette size sensing in combination with automatic collimation
- Tracking function in combination with automatic collimation

Installation/dismantling of the accessories

- Back supports
  Clamp these to the rails.
- Grips
  These are attached at the sides, behind the Bucky unit.
- Stretch grip
  Attach to the Bucky unit on the right or left. To remove the stretch grip, pull it off the Bucky unit.

Philips Medical Systems 5 Nov. 2003



Labels

The system is put together according to the customer's requirements, so the labels shown are only samples. Country-specific labels are only shown in the corresponding Instructions for Use.

1

type 4512 201 0228. s / n __/____ bucky DIAGNOST VT	This Product complies with the DHHS requirements of 21 CFR Sub-Chapter J Manufactured: June 2001
C UL US CLASSIFIED X-RAY EQUIPMENT WITH RESPECT TO ELECTRICAL FIRE, SHOCK AND MECHANICAL HAZARDS ONLY <641B>	Made by HANS PAUSCH CE
PHILIPS	Philips Medical Systems DMC GmbH Röntgenstraße 24 D – 22335 Hamburg/Germany
type 9890 010 0651. s / n yy.00.nnn BuckyDiagnost VE/VT	C UL US CLASSIFIED X-RAY EQUIPMENT WITH RESPECT TO ELECTRICAL FIRE, SHOCK AND MECHANICAL HAZARDS ONLY <641B>
Class I - TYPE B IEC 60601 - 1	Associated equipment IEC 60601-2-32:1994
CE 0123	230 V~ 50/60Hz 0,5A

CCC S

2

3

X-ray grid
Streustrahlenraster
Grille antidiffusante

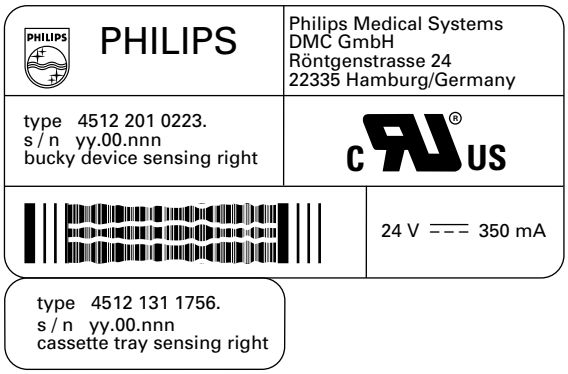
L/cm	☐	K	☐
ratio	☐	B	☐
fo(cm)	☐	Σ	☐

4

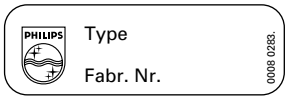
PHILIPS	Philips Medical Systems DMC GmbH Röntgenstrasse 24 22335 Hamburg/Germany
type 9848 600 0260. s / n yy.00.nnn ACL4 f. bucky VE2 / VT2	c UL® US

5

6


PHILIPS
Philips Medical Systems
DMC GmbH
Röntgenstrasse 24
22335 Hamburg/Germany
type 4512 201 0223.
s / n yy.00.nnn
bucky device sensing right
24 V 350 mA
type 4512 131 1756.
s / n yy.00.nnn
cassette tray sensing right

7


Type
Fabr. Nr.
0008 0283.

7 Appendix

7.1 Messages

- Messages in conjunction with the telephone symbol are only for Customer Service (except for operation with key-operated switch). Please note down these messages for Customer Service.
- Messages according to BuckyDiagnost CS2/4 have not been changes in the control grip display. At the floor stand BuckyDiagnost FS the abbreviation ”CS“ means ”floor stand“ resp. ”tube assembly“.

Component	Message	Remarks
General	This aux. unit is not available	Chose another auxiliary
	Grid was not released	Error in the Bucky grid, reinsert cassette, if necessary call Customer Service
	Insert cassette	–
	Insert cassette again	–
	The cassette is already exposed	Insert unexposed cassette
	SID too small	Raise tube assembly
	No Bucky servo	Motorised drive of the image receptor carriage has failed, call Customer Service
	Insert cassette centric	–
Tracking	Servo active	–
	Wallstand tilted	Set cassette tray to 0° or 90°
	Tube not at 0°	Set central beam axis vertical
	Tube not at 90°	Set central beam axis horizontal
	SID too small	Measure SID again, zoom, if necessary
	CS at limit	The tracking range of movement is smaller than the manual range of movement; move column out of the boundary area.
	Servo stand by	Move tube assembly into the capture range
	Press button again to servo	Select auxiliary again
	Servo off	Select auxiliary
	No servo for this device	–
	Servo not ready please wait	–
	Servo active please wait	–

Component	Message	Remarks
Tracking image receptor	Maybe collision with Bucky tray	Image receptor carriage is obstructed in continued running, remove obstruction
	Bucky is moving please wait	Wait until the end of the movement
	Move CS over Bucky tray	Move the tube assembly over the image receptor
	Grid exposure CS trans not locked	Move tube assembly to the image centre
	Press test for reference run	System is not ready for tracking image receptor Move tube assembly and image receptor to centre position
	Invalid cassette	Use a larger cassette size
	Tomo defect ☏	–
	Check field size	–
Key-operated switch	Restricted use	Manual operation, call Customer Service
Wall Bucky	Cassette still in the table	Remove (second) cassette from the table
	Bucky unit not at fixed position	Locate table top horizontally or vertically
	Lock CS in long. direction	Movement in the fixed mounted rails
	Lock CS in trans. direction	Movement in the ceiling suspension unit
	No wall cassette	Insert cassette
	Move CS over WS	Move tube assembly centrally over the table top

Component	Message	Remarks
Tomographic unit	No exp. release from generator	Release ready for exposure
	Exposure aborted at the generator	See Instructions for Use for the generator
	Press test for reference run	Demonstrate the tomographic movement to the patient
	Center floor stand in long. direction	Movement in the fixed mounted rails
	Center floor stand in trans. direction	Movement in the ceiling susp. unit
	Move tube ass. into SID	Movement in the telescopic tube
	Raise tube assembly	Movement in the telescopic tube
	Lower tube assembly	Movement in the telescopic tube
	Set tube assembly to 0°	Movement around the horizontal axis
	Lock CS arm hor. rotation	Turn the tube assembly round the stand so that its longitudinal axis points in the same direction as the longitudinal direction of the table
	Raise table top	–
	Lower table top	–
	Gen. preparation signalled	–
	CS long is still unlocked	Engage the floor stand in the longitudinal direction
	Preparation tomo please wait	–
	Tomo active in the other room	–
	Aux. unit changed at the generator	Wait until tomography is released During tomography the auxiliary has been changed at the generator control desk; repeat exposure
	Table top brakes released	During tomography the table top has been moved; repeat exposure
	Tomo run aborted at the generator	–
	Bucky drive is defect	Call Customer Service
Bucky table	Cassette still in the wall stand	Remove (second) cassette from the wall Bucky
Automatic Bucky tray	Insert grid	APR programme with grid selected
	Remove grid	APR programme without grid selected
	False APR set	APR record does not match Bucky, call Customer Service
Combination tube assembly with AUX 5…8	Select aux. unit at the generator	Control grip operates AUXs 1 … 4
Manual operation with automatic format sensing	Measure SID man.	Use tape measure
Automatic format sensing/ NICOL	SID too small	The film size used is not illuminated
	Enlarge long. field size	Pair of diaphragms longitudinally closed
	Enlarge lat. field size	Pair of diaphragms laterally closed
	Limit coll-light use	Allow the light beam lamp to cool

Index

PHILIPS

Let's make things better.